Technical Data Sheet LCF14-50J

# 1/4" CELLFLEX® Low loss Flexible Cable

## Product Description

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Testline 3Testline 3Testline 3Testline 3 Testline 4Testline 4Testline 4Testline 4
Testline 5Testline 5Testline 5Testline 5 Testline 6Testline 6Testline 6Testline 6

## Features/Benefits

• Low Attenuation
   The low attenuation of CELLFLEX® coaxial cable results in highly efficient signal transfer in your RF system.
• Complete Shielding
   The solid outer conductor of CELLFLEX® coaxial cable creates a continuous RFI/EMI shield that minimizes system interference.
• Low VSWR
   Special low VSWR versions of CELLFLEX® coaxial cables contribute to low system noise.
• Outstanding Intermodulation Performance
   CELLFLEX® coaxial cable's solid inner and outer conductors virtually eliminate intermods. Intermodulation performance is also confirmed with state-of-the-art equipment at the RFS factory.
• High Power Rating
   Due to their low attenuation, outstanding heat transfer properties and temperature stabilized dielectric materials, CELLFLEX® cable provides safe long term operating life at high transmit power levels.
• Wide Range of Application
   Typical areas of application are: feedlines for broadcast and terrestrial microwave antennas, wireless cellular, PCS and ESMR base stations, cabling of antenna arrays, and radio equipment interconnects.

## Technical Features

| | |
|---|---|
| Cable Type | Foam-Dielectric, Corrugated |
| Size | 1/4" |
| Fire Performance | Halogene Free |
| Return Loss (VSWR) Performance | Standard |
| Jacket Option | Black |
| Temperature & Power | Standard |
| Inner Conductor Material | Copper-Clad Aluminum Wire |
| Diameter Inner Conductor, mm (in) | 2.4 (0.09) |
| Diameter Dielectric, mm (in) | 6.0 (0.24) |
| Outer Conductor Material | Corrugated Copper |
| Diameter Outer Conductor, mm (in) | 7.5 (0.3) |
| Jacket Material | Polyethylene, PE |
| Diameter over Jacket Nominal, mm (in) | 10 (0.39) |
| Cable Weight, kg/m (lb/ft) | 0.11 (0.074) |
| Minimum Bending Radius, Single Bend, mm (in) | 40 (1.6) |
| Minimum Bending Radius, Repeated Bends, mm (in) | 120 (5) |
| Bending Moment, Nm (lb-ft) | 1.9 (1.4) |
| Flat Plate Crush Strength, N/mm (lb/in) | 14 (80) |
| Tensile Strength, N (lb) | 890 (200) |

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| | |
|---|---|
| Recommended / Maximum Clamp Spacing, m (ft) | 0.5 / 1.0 (1.75 / 3.25) |
| Impedance, Ohm | 50 +/- 1.5 |
| Maximum Frequency, GHz | 15.8 |
| Velocity, percent | 83 |
| Capacitance, pF/m (pF/ft) | 80 (24) |
| Inductance, µH/m (µH/ft) | 0.205 (0.063) |
| Peak Power Rating, kW | 10.9 |
| RF Peak Voltage, Volts | 1050 |
| Jacket Spark, Volt RMS | 5000 |
| Inner Conductor dc Resistance, ohm/1000 m (ohm/1000 ft) | 6.1 (1.86) |
| Outer Conductor dc Resistance, ohm/1000 m (Ohm/1000 ft) | 4.4 (1.34) |
| Maximum Return Loss, dB (VSWR) | Contact RFS for your VSWR performance specification for your required frequency band. |
| Installation Temperature, °C(°F) | -40 to +60 (-40 to +140) |
| Storage Temperature, °C (°F) | -70 to +85 (-94 to +185) |
| Operation Temperature, °C(°F) | -50 to +85 (-58 to +185) |
| Phase Stabilized | Phase stabilized and phase matched cables and assemblies are available upon request. |
| Applications | OEM jumpers, BTS inter-cabinet connections, GPS lines, Microwave IF cabling |

## Notes

Phase stabilized versions available upon request.

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## LCF14-50J/JFN ATTENUATION AND AVERAGE POWER

| Frequency MHz | Attenuation dB/100 m | Attenuation dB/100 ft. | Average Power kW |
|---|---|---|---|
| 0.5 | 0.291 | 0.089 | 10.9 |
| 1 | 0.412 | 0.126 | 10.9 |
| 1.5 | 0.505 | 0.154 | 10.9 |
| 2 | 0.583 | 0.178 | 10.9 |
| 10 | 1.31 | 0.399 | 5.6 |
| 20 | 1.86 | 0.566 | 3.9 |
| 30 | 2.28 | 0.695 | 3.2 |
| 50 | 2.95 | 0.900 | 2.5 |
| 88 | 3.94 | 1.20 | 1.9 |
| 100 | 4.20 | 1.28 | 1.7 |
| 108 | 4.37 | 1.33 | 1.7 |
| 150 | 5.17 | 1.58 | 1.4 |
| 174 | 5.58 | 1.70 | 1.3 |
| 200 | 6.00 | 1.83 | 1.2 |
| 300 | 7.40 | 2.25 | 0.985 |
| 400 | 8.59 | 2.62 | 0.848 |
| 450 | 9.13 | 2.78 | 0.798 |
| 500 | 9.65 | 2.94 | 0.755 |
| 512 | 9.77 | 2.98 | 0.745 |
| 600 | 10.6 | 3.24 | 0.686 |
| 700 | 11.5 | 3.51 | 0.632 |
| 800 | 12.4 | 3.77 | 0.589 |
| 824 | 12.6 | 3.83 | 0.580 |
| 894 | 13.1 | 4.00 | 0.556 |
| 900 | 13.2 | 4.01 | 0.554 |
| 925 | 13.4 | 4.07 | 0.546 |
| 960 | 13.6 | 4.15 | 0.535 |
| 1000 | 13.9 | 4.24 | 0.523 |
| 1250 | 15.7 | 4.78 | 0.464 |
| 1500 | 17.3 | 5.27 | 0.421 |
| 1700 | 18.5 | 5.64 | 0.393 |
| 1800 | 19.1 | 5.82 | 0.381 |
| 2000 | 20.2 | 6.17 | 0.360 |
| 2100 | 20.8 | 6.33 | 0.351 |
| 2200 | 21.3 | 6.49 | 0.342 |
| 2400 | 22.3 | 6.81 | 0.326 |
| 3000 | 25.3 | 7.71 | 0.288 |
| 3500 | 27.5 | 8.40 | 0.265 |
| 4000 | 29.7 | 9.05 | 0.245 |
| 4900 | 33.3 | 10.1 | 0.219 |
| 6000 | 37.4 | 11.4 | 0.195 |
| 7000 | 40.8 | 12.4 | 0.178 |
| 8000 | 44.1 | 13.5 | 0.165 |
| 9000 | 47.3 | 14.4 | 0.154 |
| 10000 | 50.3 | 15.3 | 0.145 |
| 12000 | 56.1 | 17.1 | 0.130 |
| 14000 | 61.5 | 18.8 | 0.118 |
| 15800 | 66.2 | 20.2 | 0.110 |

Standard Conditions:
For attenuation: VSWR 1.0, cable temperature 20° C (68° F).
For average power: VSWR 1.0, ambient temperature 40° C (104°F), inner conductor temperature 100° C (212° F). No solar loading.